

(I)

wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -alkenyloxy,  $C_3$ - $C_6$ -alkinyloxy, benzyloxy,  $C_1$ - $C_7$ -alkanoyloxy,  $C_2$ - $C_7$ -alkoxycarbonyloxy,  $C_1$ - $C_6$ -alkylthio,  $C_3$ - $C_6$ -alkenylthio,  $C_3$ - $C_6$ -alkinylthio,  $C_3$ - $C_8$ -cycloalkyloxy,  $C_3$ - $C_8$ -cycloalkylthio,  $C_2$ - $C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_7$ -alkylaminocarbonyl,  $C_3$ - $C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl, benzyl and phenyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy,  $C_1$ - $C_6$ -alkoxy, benzyloxy and  $C_1$ - $C_7$ -alkanoyloxy;

$R^1$  and  $R^2$ , if adjacent, may form a bridge selected from

$-(CH_2)_4-$  and  $-(CH=CH)_2-$  or  $CH_2O-CR^7R^8-O-$ , wherein  $R^7$  and  $R^8$  are selected independently from each other from hydrogen and  $C_1-C_6$ -alkyl;

$R^3$  is selected from the group consisting of hydrogen, halogen,  $C_1-C_6$ -alkyl, trifluoromethyl and  $C_1-C_6$ -hydroxyalkyl;

$R^4$  is selected from the group consisting of hydrogen,  $C_1-C_6$ -alkyl,  $C_3-C_6$ -alkenyl,  $C_3-C_6$ -alkinyl,  $C_3-C_6$ -cycloalkyl, hydroxy,  $C_1-C_6$ -alkoxy and benzyloxy;

$k$  is 0 or 1,

$A$  is selected from the group consisting of  $C_1-C_6$ -alkylene,

a substituted  $C_1-C_6$ -alkylene which is substituted one to three-fold by  $C_1-C_3$ -alkyl, hydroxy,  $C_1-C_3$ -alkoxy, fluorine, or phenyl,

$C_2-C_6$ -alkylene, in which a methylene unit is isosterically replaced by O, S,  $NR^9$ , CO, SO or  $SO_2$ , wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and  $R^9$  is selected from the group consisting of hydrogen,  $C_1-C_6$ -alkyl,  $C_3-C_6$ -alkenyl,  $C_3-C_6$ -alkinyl,  $C_1-C_6$ -acyl and  $C_1-C_6$ -alkanesulfonyl,

1,2-cyclopropylene,

$C_2-C_6$ -alkenylene,

a substituted  $C_2-C_6$ -alkenylene which is substituted once

to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, cyano or phenyl,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

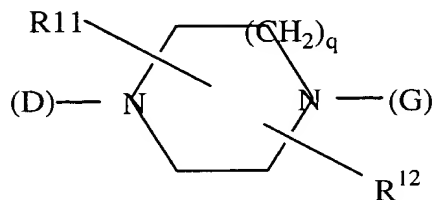
C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, in

which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is 1, 2, or 3;

R<sup>11</sup> is selected from the group consisting of hydrogen C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, hydroxymethyl, carboxy, or C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl,

R<sup>12</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl and an oxo group adjacent to a nitrogen atom,

and wherein R<sup>11</sup> and R<sup>12</sup> may together form a C<sub>1</sub>-C<sub>3</sub>-alkylene bridge under formation of a bicyclic ring system;

G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein

G<sup>1</sup> is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0, 1, 2 or 3,

s is 0 or 1,

R<sup>13</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>8</sub>-cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage may occur either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

$R^{14}$  has the same meaning as  $R^{13}$ , but is selected independently thereof;

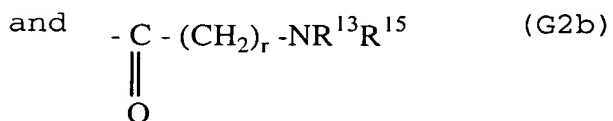
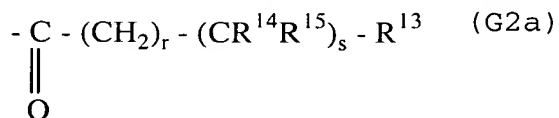
$R^{15}$  is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

$G^2$  is selected from the group consisting of



wherein r, s and the substituents  $R^{13}$  to  $R^{15}$  can have the above meaning, or the group  $-NR^{13}R^{15}$  is a nitrogen containing heterocycle,

wherein  $-NR^{13}R^{15}$  is a nitrogen-containing heterocycle bound over the nitrogen atom selected from the group consisting of

saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,

saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,

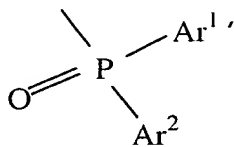
saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,

saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from N, S and O;

$G^3$  is  $-\text{SO}_2-(\text{CH}_2)_r-\text{R}^{13}$

wherein r and  $R^{13}$  have the above meanings,

$G^4$  is



wherein

Ar<sup>1</sup> and Ar<sup>2</sup> are selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,

G<sup>5</sup> is -COR<sup>16</sup>

R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, and benzyloxy,

wherein G is not -(CH<sub>2</sub>)<sub>r</sub>-(CR<sup>14</sup>R<sup>15</sup>)<sub>s</sub>-R<sup>13</sup> when

R<sup>13</sup> represents pyridyl or phenyl, which may be substituted by halogen, alkyl, alkoxy or trifluoromethyl,

R<sup>14</sup> represents hydrogen or phenyl, which may be substituted by halogen, alkyl, alkoxy or trifluoromethyl,

R<sup>15</sup> represents hydrogen,

A represents alkylene, substituted ethenylene or butadienylene,

D represents alkylene or alkenylene,

E represents piperazine or homopiperazine, and

s is 1;

wherein G is not phenyl, N-containing heteroaryl or -(CH<sub>2</sub>)<sub>ma</sub>-CHR<sup>10a11a</sup>, wherein:

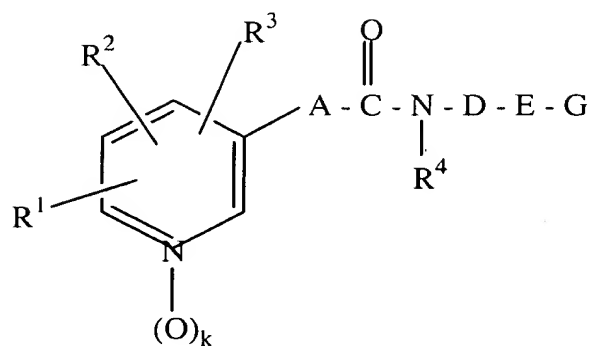
R<sup>10a</sup> is hydrogen or phenyl, R<sup>11a</sup> is a phenyl or a pyridyl, and ma is an integer of 0 to 2, and wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy; when

R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl,



- a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;
- R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each other, they may combine to form tetramethylene or -CH<sub>2</sub>OCR<sup>8a</sup>R<sup>9a</sup>O-, wherein R<sup>8a</sup> and R<sup>9a</sup> are the same or different and are each a C<sub>1</sub>-C<sub>6</sub>-alkyl;
- R<sup>3</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a hydroxy-C<sub>1</sub>-C<sub>6</sub>-alkyl;
- A is a C<sub>1</sub>-C<sub>6</sub>-alkylene or -(CR<sup>6a</sup>=CR<sup>7a</sup>)ra-, wherein R<sup>6a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a phenyl, R<sup>7a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, cyano or a phenyl, and ra is 1 or 2;
- R<sup>4</sup> is hydrogen;
- D is a C<sub>1</sub>-C<sub>10</sub>-alkylene or a C<sub>4</sub>-C<sub>10</sub>-alkylene interrupted by at least one double bond; and
- E is selected from the group consisting of piperazine, piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

3. (Once amended) A compound according to formula (I)



(I)

wherein

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_4$ -alkoxy, benzyloxy,  $C_1$ - $C_4$ -alkylthio,  $C_1$ - $C_5$ -alkanoyloxy,  $C_1$ - $C_4$ -alkylthio,  $C_2$ - $C_5$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_5$ -alkylaminocarbonyl,  $C_3$ - $C_9$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from hydrogen and  $C_1$ - $C_6$ -alkyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy, and  $C_1$ - $C_4$ -alkoxy;

$R^3$  is selected from the group consisting of hydrogen, halogen and  $C_1$ - $C_6$ -alkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, fluorine, or phenyl,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and, the residue R<sup>9</sup>, is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-acyl and methane sulfonyl;

1,2-cyclopropylene,

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, fluorine, cyano or phenyl,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once to twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl;

1,3,5-hexatrienylene,

a substituted 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

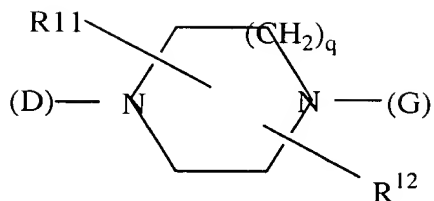
C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, wherein one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein

R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is 1, 2, or 3;

$R^{11}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_3$ -alkyl, hydroxy, hydroxymethyl, carboxy, and  $C_2$ - $C_7$ -alkoxycarbonyl and

$R^{12}$  is selected from the group consisting of hydrogen, and an oxo group adjacent to a nitrogen atom,

and wherein  $R^{11}$  and  $R^{12}$  may together form a  $C_1$ - $C_3$ -alkylene bridge under formation of a bicyclic ring system;

G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0, 1 or 2,

s is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkynyl,  $C_3$ - $C_8$ -cycloalkyl; benzyl, phenyl;

monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O, wherein the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

$R^{14}$  has the same meaning as  $R^{13}$ , but is selected independently thereof;

$R^{15}$  is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, phenyl,

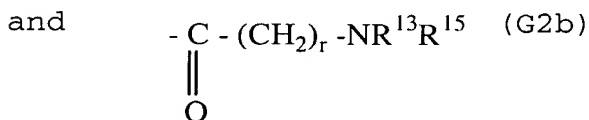
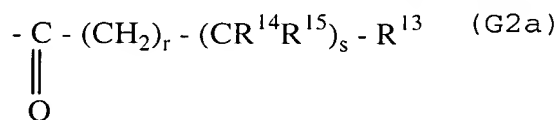
monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms

and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group, and

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms can be selected from N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group;

G<sup>2</sup> is selected from the group consisting of



wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup> is a nitrogen containing heterocycle,

wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom, the nitrogen-containing heterocycle selected from the group consisting of

saturated or unsaturated monocyclic, four to eight-membered heterocycles,

saturated or unsaturated monocyclic, four to eight-membered heterocycles which aside from the essential nitrogen

atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,

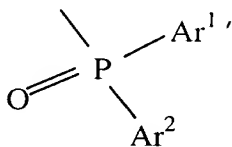
saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms, and

saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms that aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from the group consisting of N, S and O;

$G^3$  is  $-\text{SO}_2-(\text{CH}_2)_r-\text{R}^{13}$

wherein  $r$  and  $\text{R}^{13}$  have the above meaning,

$G^4$  is



wherein

$\text{Ar}^1$  and  $\text{Ar}^2$  are be selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,

$G^5$  is  $-\text{COR}^{16}$

$\text{R}^{16}$  is selected from the group consisting of trifluoromethyl,  $\text{C}_1$ - $\text{C}_6$ -alkoxy,  $\text{C}_3$ - $\text{C}_6$ -alkenyloxy, and benzyloxy,

wherein  $G$  is not phenyl, N-containing heteroaryl or  $-(\text{CH}_2)_{ma}-$

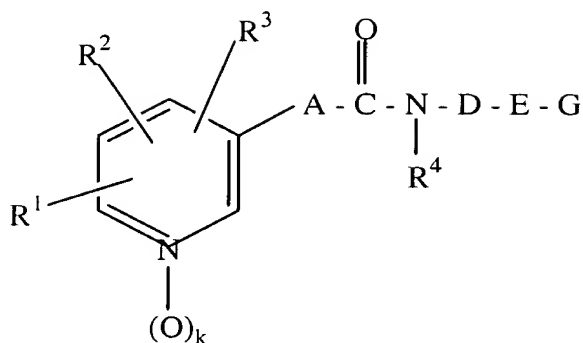


CHR<sup>10a</sup>R<sup>11a</sup>, wherein:

R<sup>10a</sup> is hydrogen or phenyl, R<sup>11a</sup> is a phenyl or a pyridyl, and m is an integer of 0 to 2, and wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy; when

- R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;
- R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each other, they may combine to form tetramethylene or -CH<sub>2</sub>OCR<sup>8a</sup>R<sup>9a</sup>O-, wherein R<sup>8a</sup> and R<sup>9a</sup> are the same or different and are each a C<sub>1</sub>-C<sub>6</sub>-alkyl;
- R<sup>3</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a hydroxy-C<sub>1</sub>-C<sub>6</sub>-alkyl;
- A is a C<sub>1</sub>-C<sub>6</sub>-alkylene or -(CR<sup>6a</sup>=CR<sup>7a</sup>)ra-, wherein R<sup>6a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a phenyl, R<sup>7a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, cyano or a phenyl, and ra is 1 or 2;
- R<sup>4</sup> is hydrogen;
- D is a C<sub>1</sub>-C<sub>10</sub>-alkylene or a C<sub>4</sub>-C<sub>10</sub>-alkylene interrupted by at least one double bond; and
- E is selected from the group consisting of piperazine, piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

12. (three times amended) A pharmaceutical composition comprising the compound of formula (I)



(I)

wherein:

$R^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_2$ - $C_6$ -alkinyl, trifluoromethyl,  $C_3$ - $C_8$ -cycloalkyl,  $C_1$ - $C_6$ -hydroxyalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy,  $C_3$ - $C_6$ -alkenyloxy,  $C_3$ - $C_6$ -alkinyloxy, benzyloxy,  $C_1$ - $C_7$ -alkanoyloxy,  $C_2$ - $C_7$ -alkoxycarbonyloxy,  $C_1$ - $C_6$ -alkylthio,  $C_3$ - $C_6$ -alkenylthio,  $C_3$ - $C_6$ -alkinylthio,  $C_3$ - $C_8$ -cycloalkyloxy,  $C_3$ - $C_8$ -cycloalkylthio,  $C_2$ - $C_7$ -alkoxycarbonyl, aminocarbonyl,  $C_2$ - $C_7$ -alkylaminocarbonyl,  $C_3$ - $C_{13}$ -dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $NR^5R^6$ , wherein

$R^5$  and  $R^6$  are selected independently of each other from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl, benzyl and phenyl;

$R^2$  is selected from the group consisting of hydrogen, halogen, cyano,  $C_1$ - $C_6$ -alkyl, trifluoromethyl, hydroxy,  $C_1$ - $C_6$ -alkoxy, benzyloxy and  $C_1$ - $C_7$ -alkanoyloxy;

$R^3$  is selected from the group consisting of hydrogen, halogen,  $C_1$ - $C_6$ -alkyl, trifluoromethyl and  $C_1$ - $C_6$ -hydroxyalkyl;

$R^4$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_3$ - $C_6$ -cycloalkyl, hydroxy,  $C_1$ - $C_6$ -alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of  $C_1$ - $C_6$ -alkylene,

a substituted  $C_1$ - $C_6$ -alkylene which is substituted one to three-fold by  $C_1$ - $C_3$ -alkyl, hydroxy,  $C_1$ - $C_3$ -alkoxy, fluorine, or phenyl,

$C_2$ - $C_6$ -alkylene, in which a methylene unit is isosterically replaced by O, S,  $NR^9$ , CO, SO or  $SO_2$ , wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and  $R^9$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkinyl,  $C_1$ - $C_6$ -acyl and  $C_1$ - $C_6$ -alkanesulfonyl,

1,2-cyclopropylene,

$C_2$ - $C_6$ -alkenylene,

a substituted  $C_2$ - $C_6$ -alkenylene which is substituted once to three-fold by  $C_1$ - $C_3$ -alkyl, hydroxy,  $C_1$ - $C_3$ -alkoxy, fluorine, cyano or phenyl,

$C_4$ - $C_6$ -alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

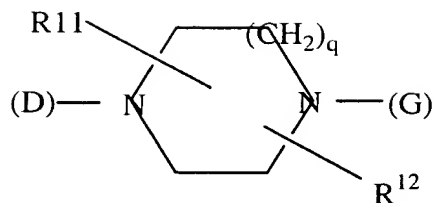
a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, in which one to three methylene units are isosterically replaced by O, S, NR<sup>10</sup>, CO, SO, or SO<sub>2</sub>, wherein R<sup>10</sup> has the same meaning as R<sup>9</sup>, but is selected independently thereof;

E is



wherein

q is 1, 2, or 3;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_6$ -alkyl, hydroxy, hydroxymethyl, carboxy, or  $C_2$ - $C_7$ -alkoxycarbonyl,

$R^{12}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl and an oxo group adjacent to a nitrogen atom,

G is selected from the group consisting of G1, G2, G3, G4, and G5, wherein

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

r is 0 to 3,

s is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkynyl,  $C_3$ - $C_8$ -cycloalkyl,

saturated or unsaturated four to eight-membered heterocycles,

saturated or unsaturated four to eight-membered heterocycles which contain one or two hetero-atoms selected from the group consisting of N, S and O,

benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles,

monocyclic aromatic five or six-membered heterocycles which contain one to three hetero-atoms selected from the group consisting of N, S and O where the heter-atoms and are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage can occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

R<sup>14</sup> has the same meaning as R<sup>13</sup>, but is selected independently thereof;

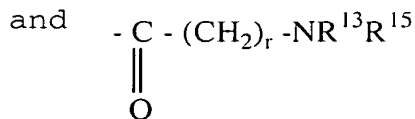
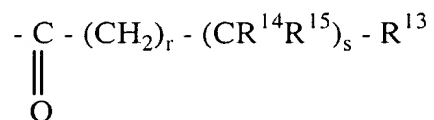
R<sup>15</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, and phenyl,

monocyclic aromatic five or six-member heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O and wherein the hetero-atoms are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O and the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

G<sup>2</sup> is selected from the group consisting of



wherein r, s and the substituents R<sup>13</sup> to R<sup>15</sup> can have the above meaning, or the group -NR<sup>13</sup>R<sup>15</sup>,

wherein -NR<sup>13</sup>R<sup>15</sup> is a nitrogen-containing heterocycle bound over the nitrogen atom selected from the group consisting of

saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles,

saturated or unsaturated monocyclic, four to eight-membered nitrogen-containing heterocycles which, aside from the essential nitrogen atom, contain one or two further hetero-atoms selected from the group consisting of N, S and O,

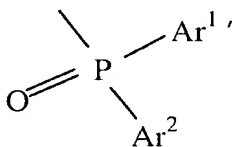
saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms,

saturated or unsaturated bi- or tricyclic anellated or bridged nitrogen-containing heterocycles with 8 to 16 ring atoms which aside from the essential nitrogen atom, contain one or two further hetro-atoms that are selected from N, S and O;

$G^3$  is  $-\text{SO}_2-(\text{CH}_2)_r-\text{R}^{13}$  ( $G3$ )

wherein  $r$  and  $\text{R}^{13}$  have the above meanings,

$G^4$  is



wherein

$\text{Ar}^1$  and  $\text{Ar}^2$  are selected independently from each other from phenyl, pyridyl or naphthyl,



G<sup>5</sup> is -COR<sup>16</sup> (G5)

R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, and benzyloxy,

wherein G is not -(CH<sub>2</sub>)<sub>r</sub>-(CR<sup>14</sup>R<sup>15</sup>)<sub>s</sub>-R<sup>13</sup> when  
R<sup>13</sup> represents pyridyl or phenyl, substituted by halogen, alkyl, alkoxy or trifluoromethyl,  
R<sup>14</sup> represents hydrogen or phenyl, substituted by halogen, alkyl, alkoxy or trifluoromethyl,  
R<sup>15</sup> represents hydrogen,

A represents alkylene, substituted ethenylene or butadienylene,

D represents alkylene or alkenylene,

E represents piperazine or homopiperazine, and

S is 1;

wherein G<sup>1</sup> is not phenyl, N-containing heteroaryl or (-CH<sub>2</sub>)<sub>ma</sub>-CHR<sup>10a</sup>R<sup>11a</sup>, wherein:

R<sup>10a</sup> is hydrogen or phenyl, R<sup>11a</sup> is a phenyl or a pyridyl, and ma is an integer of 0 to 2, and wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy; when

R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;

R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each

other, they may combine to form tetramethylene or  
 $-\text{CH}_2\text{OCR}^{8a}\text{R}^{9a}\text{O}-$ , wherein  $\text{R}^{8a}$  and  $\text{R}^{9a}$  are the same or  
different and are each a  $\text{C}_1\text{-C}_6\text{-alkyl}$ ;

$\text{R}^3$  is hydrogen, a  $\text{C}_1\text{-C}_6\text{-alkyl}$  or a hydroxy- $\text{C}_1\text{-C}_6\text{-alkyl}$ ;

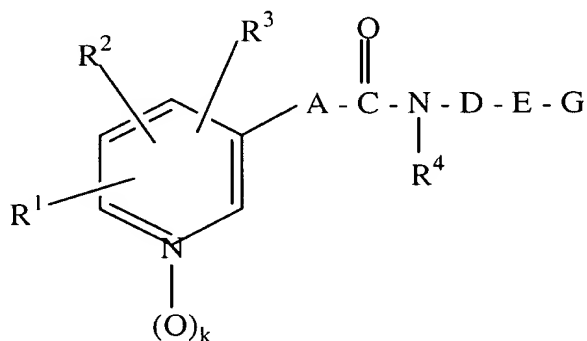
A is a  $\text{C}_1\text{-C}_6\text{-alkylene}$  or  $-(\text{CR}^{6a}=\text{CR}^{7a})\text{ra}-$ , wherein  $\text{R}^{6a}$  is  
hydrogen, a  $\text{C}_1\text{-C}_6\text{-alkyl}$  or a phenyl,  $\text{R}^{7a}$  is hydrogen, a  $\text{C}_1\text{-C}_6\text{-alkyl}$ ,  
cyano or a phenyl, and ra is 1 or 2;

$\text{R}^4$  is hydrogen;

D is a  $\text{C}_1\text{-C}_{10}\text{-alkylene}$  or a  $\text{C}_4\text{-C}_{10}\text{-alkylene}$  interrupted by at  
least one double bond; and

E is selected from the group consisting of piperazine,  
piperazine, which is substituted by  $\text{C}_1\text{-C}_6\text{-alkyl}$ ,  
homopiperazine, and homopiperazine, which is substituted  
by  $\text{C}_1\text{-C}_6\text{-alkyl}$ .

32. (once amended) A pharmaceutical composition  
comprising the compound of formula (I)



(I)

wherein

$\text{R}^1$  is selected from the group consisting of hydrogen,  
halogen, cyano,  $\text{C}_1\text{-C}_6\text{-alkyl}$ , trifluoromethyl,  $\text{C}_3\text{-C}_8\text{-cycloalkyl}$ ,  
 $\text{C}_1\text{-C}_6\text{-hydroxyalkyl}$ , hydroxy,  $\text{C}_1\text{-C}_4\text{-alkoxy}$ , benzyloxy,  $\text{C}_1\text{-C}_4\text{-}$

alkylthio, C<sub>1</sub>-C<sub>5</sub>-alkanoyloxy, C<sub>1</sub>-C<sub>4</sub>-alkylthio, C<sub>2</sub>-C<sub>5</sub>-alkoxycarbonyl, aminocarbonyl, C<sub>2</sub>-C<sub>5</sub>-alkylaminocarbonyl, C<sub>3</sub>-C<sub>9</sub>-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, and NR<sup>5</sup>R<sup>6</sup>, wherein

R<sup>5</sup> and R<sup>6</sup> are selected independently of each other from hydrogen and C<sub>1</sub>-C<sub>6</sub>-alkyl;

R<sup>2</sup> is selected from the group consisting of hydrogen, halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, and C<sub>1</sub>-C<sub>4</sub>-alkoxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen and C<sub>1</sub>-C<sub>6</sub>-alkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, fluorine, or phenyl,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and, the residue R<sup>9</sup>, is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>1</sub>-C<sub>6</sub>-acyl and methane sulfonyl;

1,2-cyclopropylene,

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, fluorine, cyano or phenyl,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once to twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl;

1,3,5-hexatrienylene,

a substituted 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano, and

ethinylenylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl or hydroxy;

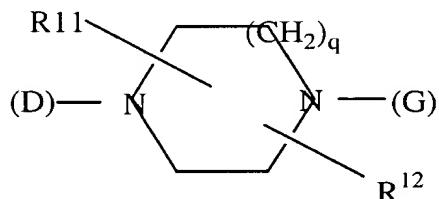
C<sub>4</sub>-C<sub>10</sub>-alkinylenylene,

a substituted  $C_4$ - $C_{10}$ -alkynylene which is substituted once or twice by  $C_1$ - $C_3$ -alkyl or hydroxy; and

$C_2$ - $C_{10}$ -alkylene,  $C_4$ - $C_{10}$ -alkenylene or  $C_4$ - $C_{10}$ -alkynylene, wherein one to three methylene units are isosterically replaced by O, S,  $NR^{10}$ , CO, SO, or  $SO_2$ , wherein

$R^{10}$  has the same meaning as  $R^9$ , but is selected independently thereof;

E is



wherein

$q$  is 1, 2, or 3;

$R^{11}$  is selected from the group consisting of hydrogen  $C_1$ - $C_3$ -alkyl, hydroxy, hydroxymethyl, carboxy, and  $C_2$ - $C_7$ -alkoxycarbonyl and

$R^{12}$  is selected from the group consisting of hydrogen, and an oxo group adjacent to a nitrogen atom,

and wherein  $R^{11}$  and  $R^{12}$  may together form a  $C_1$ - $C_3$ -alkylene bridge under formation of a bicyclic ring system;

G is selected from the group consisting of G1, G2, G3,

G4, and G5, wherein

$G^1$  is  $-(CH_2)_r-(CR^{14}R^{15})_s-R^{13}$

$r$  is 0, 1 or 2,

$s$  is 0 or 1,

$R^{13}$  is selected from the group consisting of hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_3$ - $C_6$ -alkenyl,  $C_3$ - $C_6$ -alkynyl,  $C_3$ - $C_8$ -cycloalkyl; benzyl, phenyl;

monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from the group consisting of N, S and O, wherein the linkage occurs either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group,

$R^{14}$  has the same meaning as  $R^{13}$ , but is selected

independently thereof;

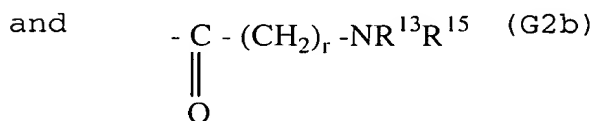
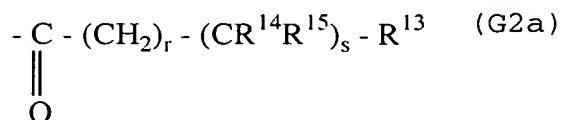
$R^{15}$  is selected from the group consisting of hydrogen, hydroxy, methyl, benzyl, phenyl,

monocyclic aromatic five or six-membered heterocycles, which contain one to three hetero-atoms selected from the group consisting of N, S and O, wherein the heterocycles are either bound directly or over a methylene group,

anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the linkage occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group, and

anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms can be selected from N, S and O and the linkage may occur either over an aromatic ring or a hydrogenated ring and either directly or over a methylene group;

$G^2$  is selected from the group consisting of



wherein  $r$ ,  $s$  and the substituents  $R^{13}$  to  $R^{15}$  can have the

above meaning, or the group  $\text{-NR}^{13}\text{R}^{15}$  is a nitrogen containing heterocycle,

wherein  $\text{-NR}^{13}\text{R}^{15}$  is a nitrogen-containing heterocycle bound over the nitrogen atom, the nitrogen-containing heterocycle selected from the group consisting of

saturated or unsaturated monocyclic, four to eight-membered heterocycles,

saturated or unsaturated monocyclic, four to eight-membered heterocycles which aside from the essential nitrogen atom contain one or two further hetero-atoms selected from the group consisting of N, S and O,

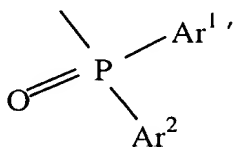
saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms, and

saturated or unsaturated bi- or tricyclic anellated or bridged heterocycles with 8 to 16 ring atoms that aside from the essential nitrogen atom, contain one or two further hetero-atoms that are selected from the group consisting of N, S and O;

$\text{G}^3$  is  $\text{-SO}_2\text{-(CH}_2\text{)}_r\text{-R}^{13}$

wherein  $r$  and  $\text{R}^{13}$  have the above meaning,

$\text{G}^4$  is





wherein

Ar<sup>1</sup> and Ar<sup>2</sup> are be selected independently from each other from the group consisting of phenyl, pyridyl and naphthyl,

G<sup>5</sup> is -COR<sup>16</sup>

R<sup>16</sup> is selected from the group consisting of trifluoromethyl, C<sub>1</sub>-C<sub>6</sub>-alkoxy, C<sub>3</sub>-C<sub>6</sub>-alkenyloxy, and benzyloxy,

wherein G is not phenyl, N-containing heteroaryl or (-CH<sub>2</sub>)<sub>ma</sub>-CHR<sup>10a</sup>R<sup>11a</sup>, wherein:

R<sup>10a</sup> is hydrogen or phenyl, R<sup>11a</sup> is a phenyl or a pyridyl, and ma is an integer of 0 to 2, and wherein the phenyl group or moiety may be substituted by one or two members selected from the group consisting of halogen, a C<sub>1</sub>-C<sub>6</sub> alkyl, trifluoromethyl and a C<sub>1</sub>-C<sub>6</sub> alkoxy; when

R<sup>1</sup> is hydrogen, a halogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, a C<sub>1</sub>-C<sub>6</sub>-alkoxy, a C<sub>1</sub>-C<sub>6</sub>-alkylthio, a C<sub>3</sub>-C<sub>8</sub>-cycloalkyloxy, a C<sub>3</sub>-C<sub>8</sub>-cycloalkylthio, a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyl, carboxy, a phenyl, a phenoxy, a phenylthio, 3-pyridyloxy or 3-pyridylthio;

R<sup>2</sup> is hydrogen, a hydroxy, a C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy or a C<sub>2</sub>-C<sub>7</sub>-alkoxycarbonyloxy, or when R<sup>1</sup> and R<sub>2</sub> are adjacent to each other, they may combine to form tetramethylene or -CH<sub>2</sub>OCR<sup>8a</sup>R<sup>9a</sup>O-, wherein R<sup>8a</sup> and R<sup>9a</sup> are the same or different and are each a C<sub>1</sub>-C<sub>6</sub>-alkyl;

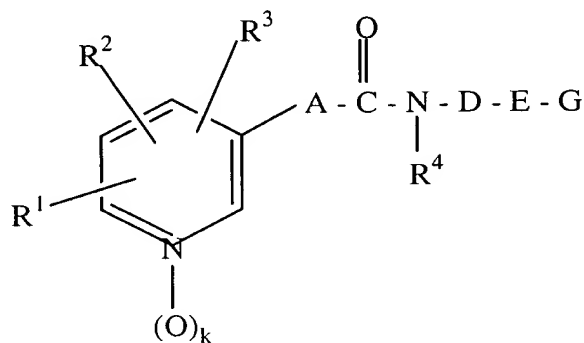
R<sup>3</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a hydroxy-C<sub>1</sub>-C<sub>6</sub>-alkyl;

A is a C<sub>1</sub>-C<sub>6</sub>-alkylene or -(CR<sup>6a</sup>=CR<sup>7a</sup>)ra-, wherein R<sup>6a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl or a phenyl, R<sup>7a</sup> is hydrogen, a C<sub>1</sub>-C<sub>6</sub>-alkyl, cyano or a phenyl, and ra is 1 or 2;

R<sup>4</sup> is hydrogen;

- D is a C<sub>1</sub>-C<sub>10</sub>-alkylene or a C<sub>4</sub>-C<sub>10</sub>-alkylene interrupted by at least one double bond; and
- E is selected from the group consisting of piperazine, piperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl, homopiperazine, and homopiperazine, which is substituted by C<sub>1</sub>-C<sub>6</sub>-alkyl.

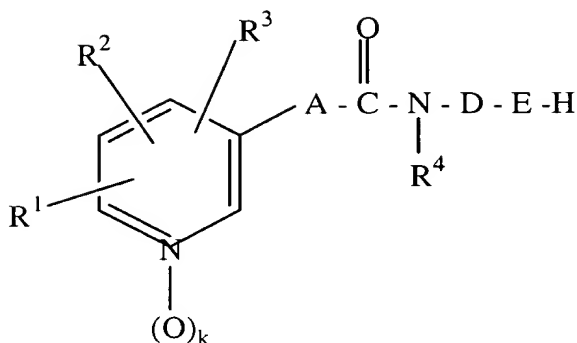
37. (once amended) A method for production of compounds according to formula (I)



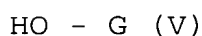
(I)

wherein G is selected from the group consisting of an acyl residue, a carbamoyl residue, a sulfonyl residue and a phosphinoyl residue,

wherein compounds of a formula



are reacted with a compound of formula (V)



wherein G is selected from the group consisting of acyl residues, carbamoyl residues, sulfonyl residues, phosphinoyl residues, and their reactive derivatives, wherein:

$\text{R}^1$  is selected from the group consisting of hydrogen, halogen, cyano,  $\text{C}_1\text{-C}_6\text{-alkyl}$ ,  $\text{C}_3\text{-C}_6\text{-alkenyl}$ ,  $\text{C}_2\text{-C}_6\text{-alkinyl}$ , trifluoromethyl,  $\text{C}_3\text{-C}_8\text{-cycloalkyl}$ ,  $\text{C}_1\text{-C}_6\text{-hydroxyalkyl}$ , hydroxy,  $\text{C}_1\text{-C}_6\text{-alkoxy}$ ,  $\text{C}_3\text{-C}_6\text{-alkenyloxy}$ ,  $\text{C}_3\text{-C}_6\text{-alkinyloxy}$ , benzyloxy,  $\text{C}_1\text{-C}_7\text{-alkanoyloxy}$ ,  $\text{C}_2\text{-C}_7\text{-alkoxycarbonyloxy}$ ,  $\text{C}_1\text{-C}_6\text{-alkylthio}$ ,  $\text{C}_3\text{-C}_6\text{-alkenylthio}$ ,  $\text{C}_3\text{-C}_6\text{-alkinylthio}$ ,  $\text{C}_3\text{-C}_8\text{-cycloalkyloxy}$ ,  $\text{C}_3\text{-C}_8\text{-cycloalkylthio}$ ,  $\text{C}_2\text{-C}_7\text{-alkoxycarbonyl}$ , aminocarbonyl,  $\text{C}_2\text{-C}_7\text{-alkylaminocarbonyl}$ ,  $\text{C}_3\text{-C}_{13}\text{-dialkylaminocarbonyl}$ , carboxy, phenyl, phenoxy, phenylthio, pyridyloxy, pyridylthio, and  $\text{NR}^5\text{R}^6$ , wherein

$\text{R}^5$  and  $\text{R}^6$  are selected independently of each other from the group consisting of hydrogen,  $\text{C}_1\text{-C}_6\text{-alkyl}$ ,  $\text{C}_3\text{-C}_6\text{-alkenyl}$ ,  $\text{C}_3\text{-C}_6\text{-alkinyl}$ , benzyl and phenyl;

$\text{R}^2$  is selected from the group consisting of hydrogen,

halogen, cyano, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy, benzyloxy and C<sub>1</sub>-C<sub>7</sub>-alkanoyloxy;

R<sup>3</sup> is selected from the group consisting of hydrogen, halogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, trifluoromethyl and C<sub>1</sub>-C<sub>6</sub>-hydroxyalkyl;

R<sup>4</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>3</sub>-C<sub>6</sub>-cycloalkyl, hydroxy, C<sub>1</sub>-C<sub>6</sub>-alkoxy and benzyloxy;

k is 0 or 1,

A is selected from the group consisting of C<sub>1</sub>-C<sub>6</sub>-alkylene,

a substituted C<sub>1</sub>-C<sub>6</sub>-alkylene which is substituted one to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine, or phenyl,

C<sub>2</sub>-C<sub>6</sub>-alkylene, in which a methylene unit is isosterically replaced by O, S, NR<sup>9</sup>, CO, SO or SO<sub>2</sub>, wherein, with the exception of CO, the isosteric substitution is not adjacent to the amide group and R<sup>9</sup> is selected from the group consisting of hydrogen, C<sub>1</sub>-C<sub>6</sub>-alkyl, C<sub>3</sub>-C<sub>6</sub>-alkenyl, C<sub>3</sub>-C<sub>6</sub>-alkinyl, C<sub>1</sub>-C<sub>6</sub>-acyl and C<sub>1</sub>-C<sub>6</sub>-alkanesulfonyl,

1,2-cyclopropylene,

C<sub>2</sub>-C<sub>6</sub>-alkenylene,

a substituted C<sub>2</sub>-C<sub>6</sub>-alkenylene which is substituted once to three-fold by C<sub>1</sub>-C<sub>3</sub>-alkyl, hydroxy, C<sub>1</sub>-C<sub>3</sub>-alkoxy, fluorine,

cyano or phenyl,

C<sub>4</sub>-C<sub>6</sub>-alkadienylene,

a substituted C<sub>4</sub>-C<sub>6</sub>-alkadienylene which is substituted once or twice by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl;

1,3,5-hexatrienylene,

a 1,3,5-hexatrienylene which is substituted by C<sub>1</sub>-C<sub>3</sub>-alkyl, fluorine, cyano or phenyl, and

ethinylene,

D is selected from the group consisting of C<sub>2</sub>-C<sub>10</sub>-alkylene,

a substituted C<sub>2</sub>-C<sub>10</sub>-alkylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

C<sub>4</sub>-C<sub>10</sub>-alkenylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkenylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy;

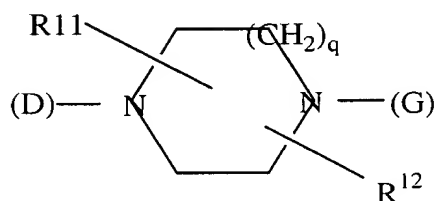
C<sub>4</sub>-C<sub>10</sub>-alkinylene,

a substituted C<sub>4</sub>-C<sub>10</sub>-alkinylene which is substituted once or twice by C<sub>1</sub>-C<sub>6</sub>-alkyl, hydroxy, or C<sub>1</sub>-C<sub>6</sub>-alkoxy; and

C<sub>2</sub>-C<sub>10</sub>-alkylene, C<sub>4</sub>-C<sub>10</sub>-alkenylene or C<sub>4</sub>-C<sub>10</sub>-alkinylene, in which one to three methylene units are isosterically replaced

by O, S,  $\text{NR}^{10}$ , CO, SO, or  $\text{SO}_2$ , wherein  $\text{R}^{10}$  has the same meaning as  $\text{R}^9$ , but is selected independently thereof;

E is



wherein

$q$  is 1, 2, or 3;

$\text{R}^{11}$  is selected from the group consisting of hydrogen  $\text{C}_1$ - $\text{C}_6$ -alkyl, hydroxy, hydroxymethyl, carboxy, or  $\text{C}_2$ - $\text{C}_7$ -alkoxycarbonyl,

$\text{R}^{12}$  is selected from the group consisting of hydrogen,  $\text{C}_1$ - $\text{C}_6$ -alkyl and an oxo group adjacent to a nitrogen atom.